

### REMARKS

In the Office Action, the Examiner noted that claims 1-22 are pending in the application and that claims 1-22 stand rejected. By this response, claims 1, 12, 15, 17 and 22 are amended to correct for formal errors pointed out by the Examiner and to more clearly define the Applicant's invention and not in response to prior art, and all other claims continue un-amended.

In view of the above amendments and the following discussion, the Applicants respectfully submit that none of these claims now pending in the application is obvious under the provisions of 35 U.S.C. § 103. Thus the Applicant believes that all of these claims are now in allowable form.

### Objections

#### **A. Drawings**

The Examiner has objected to FIG.s 1-13 alleging that the drawings lack distinguishing labels or characteristic shapes that clearly indicate the context of the Figures. In response, the Applicant is submitting corrected FIG.s 1-13 along with this response.

Having made these changes, the Applicant respectfully submits that the basis for the Examiner's objections has been removed. As such, the Applicant respectfully requests that the Examiner's objections to the drawings be withdrawn.

#### **B. Drawings**

The Examiner has objected to the drawings as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign mentioned in the description: "network 20." In response, the Applicant has amended FIG. 1 to include the reference sign "20."

Having made this change, the Applicant respectfully submits that the basis for the Examiner's objection has been removed. As such, the Applicant respectfully requests that the Examiner's objection to the drawings be withdrawn.

### **C. Drawings**

The Examiner has objected to the drawings as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "64" and "290."

With respect to the reference sign "64" the Applicant would like to respectfully point out to the Examiner that the reference sign "64" is mentioned in the Applicant's description on page 13, line 20. As such, the Applicant respectfully requests that the Examiners objection to the drawings be withdrawn.

With respect to the reference sign "290", the Applicant has amended the Specification to include the reference sign "290."

Having made these changes, the Applicant respectfully submits that the basis for the Examiner's objection has been removed. As such, the Applicant respectfully requests that the Examiners objection to the drawings be withdrawn.

### **D. Specification**

The Examiner has objected to the specification because of the following informalities:

On page 7, line 23, it seems that "demultiplexers and multiplexers" is used where "multiplexers and demultiplexers" may be intended.

On page 11, line 24, it seems that "42" is used where "44" may be intended.

On page 11, line 28, it seems that "34" is used where "44" may be intended.

In response, the Applicant has amended the Specification to correct for the informalities pointed out by the Examiner. Having made these changes, the Applicant respectfully submits that the basis for the Examiner's objection has been removed. As such, the Applicant respectfully requests that the Examiners objection to the Specification be withdrawn.

### **E. Claims**

The Examiner has objected to claims 12, 15 and 17 because of the following informalities:

It seems that "mulitplexer" is used where "multiplexer" may be intended.

In response, the Applicant has amended claims 12, 15 and 17 to correct for the informalities pointed out by the Examiner. Having made these changes, the Applicant respectfully submits that the basis for the Examiner's objection has been removed. As such, the Applicant respectfully requests that the Examiner's objection to claims 12, 15 and 17 be withdrawn.

### Rejections

#### **A. 35 U.S.C. § 103**

The Examiner rejected claims 1-2, 4-7, 11 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Hamel et al. (U.S. Patent 5,943,148, hereinafter "Hamel") in view of Armitage et al. ("Design of a Survivable WDM Photonic Network", hereinafter "Armitage") and Sharma et al. (U.S. Patent 5,717,795, hereinafter "Sharma"). The rejection is respectfully traversed.

The Examiner alleges that regarding claim 1, Hamel discloses all of the aspects of the Applicant's invention except that Hamel does not expressly disclose that the tributary subsystems are configured to be coupled to pluralities of devices to enable the devices to communicate over the ring network. The Examiner also correctly concedes that Hamel does not disclose that multiplexing subsystems channel signals between the pluralities of devices and the ring network and that the module comprises an integral cross-connect module, and the determining is based on address information included in the received signals. However, the Examiner alleges that it is well known and conventional in the art that the tributary subsystems of Hamel would be configured to be coupled to pluralities of devices to enable the devices to communicate over the ring network. The Applicant respectfully disagrees.

The Examiner further alleges that Armitage discloses an integral cross-connect module and that it would have been obvious to a person of ordinary skill in the art to implement the cross-connect module of Armitage as the module of the system of Sharma. The Applicant respectfully disagrees.

The Examiner further alleges that Sharma discloses an integral cross-connect module and said determining based on address information and that it would have been obvious to a person of ordinary skill in the art to implement the cross-connect module of Sharma in the system of Hamel in view of Armitage. The Applicant respectfully disagrees.

The Applicant submits that the teachings of Hamel fail to teach, suggest or disclose the invention of the Applicant at least with respect to independent claim 1, which specifically recites:

“A system for communicating between a plurality of nodes coupled to an optical wavelength division multiplexed ring network comprising:

a first terminal node having a communication subsystem configured to be coupled to the ring network to receive and to transmit signals at a first wavelength and to permit signals at other wavelengths to pass, a tributary subsystem configured to be coupled to a plurality of devices to enable the devices to communicate over the ring network, and a multiplexing subsystem coupled to the tributary subsystem and to the communication subsystem to channel signals between the plurality of devices and the ring network;

a second terminal node having a communication subsystem configured to be coupled to the ring network to receive and to transmit signals at a second wavelength and to permit signals at other wavelengths to pass, a tributary subsystem configured to be coupled to a plurality of devices to enable the devices to communicate over the ring network, and a multiplexing subsystem coupled to the tributary subsystem and to the communication subsystem to channel signals between the plurality of devices and the ring network; and

a head-end coupled to the ring network to receive and to transmit signals at both the first and second wavelengths, the head-end node having a demultiplexer to isolate signals received at the first and second wavelengths, an integral cross-connect module to determine an output wavelength at which to transmit received signals based on address information included in the received signals, and a multiplexer to combine the received signals for transmission on the ring network at the first and second wavelengths;

wherein said first terminal node and said second terminal node communicate with said head-end node via respective separate communication channels." (emphasis added).

In support of claim 1, the Applicant, in the Specification, recites:

"Tributary subsystem 34 includes interface cards of different types and rates to provide client interfaces 38 as appropriate for a given application, to which client systems (not shown) are coupled as desired. A communication interface 40 between tributary subsystem 34 and multiplexing subsystem 32 is provided to insulate multiplexing subsystem 32 from the effects of interfacing different client systems to tributary subsystem 34.

Multiplexing subsystem 32 receives the different tributary channels or signals from client systems coupled to tributary systems 34 over interface 40 and aggregates them onto a single stream with a format appropriate to the desired application, such as SONET/SDH, ATM or IP." (See Specification, page 11, lines 8-17.)

As conceded by the Examiner, there is absolutely no teaching, suggestion or disclosure in Hamel for a tributary subsystem or multiplexing subsystem as claimed in at least the Applicant's claim 1 and taught in the Applicant's specification. The Examiner alleges that it would have been obvious to use a tributary subsystem in the invention of Hamel as taught in the Applicant's invention but does not provide any support for such an allegation. The Applicant respectfully submits that it is not obvious to use a tributary subsystem as taught and claimed by the Applicant. Employing different cards of different types and rates to provide client interfaces is not obvious. In addition, the Examiner alleges that if Hamel were to employ tributary subsystems, Hamel would then accordingly comprise multiplexing subsystems to channel signal signals between the pluralities of devices and the ring network. Again, the Examiner provides no support for this allegation. It is not obvious to employ a multiplexing subsystem to receive the different tributary channels or signals from client systems coupled to tributary systems over an interface and aggregate them onto a single stream with a format appropriate to the desired application. As such, the Applicant respectfully

submits that Hamel fails to teach or suggest the invention of the Applicant, at least with regard to claim 1.

Furthermore, there is absolutely no teaching, suggestion or disclosure in Hamel for nodes communicating with a head-end node via respective separate communication channels. In the Specification, the Applicant specifically recites:

“Each terminal node 26 has a separate communication channel 28 over network 20 to head-end 24 but does not have a direct communication channel to any other terminal node 26.” (See Specification, page 8, lines 17-19).

In contrast to the Applicant's invention, Hamel specifically recites:

“This network, intended for the transmission of information in optical form, wavelength multiplexed, comprises nodes (N1, N2) linked to each other by at least one optical fiber (F1), at least one wavelength being treated in each node.” (See Hamel, Abstract).

As evident from the teachings of Hamel, the nodes do not communicate with a head-end node via a respective separate communication channel as taught in the Applicant's specification and claimed in at least the Applicant's claim 1. Nodes in Hamel communicate with a node that the Examiner considers a head-end node via a communication channel shared among the nodes.

As conceded by the Examiner, the teachings of neither Hamel nor Armitage, nor Sharma, individually teach, suggest or disclose the invention of the Applicant, at least with respect to independent claim 1. In addition, the Applicant submits that there is absolutely no motivation or suggestion in either Hamel, or Armitage or Sharma for the combination of the references to attempt to teach the invention of the Applicant.

For prior art reference to be combined to render obvious a subsequent invention under 35 U.S.C. § 103, there must be something in the prior art as a whole which suggests the desirability, and thus the obviousness, of making the combination. Uniroyal v. Rudkin-Wiley, 5 U.S.P.SQ.2d 1434, 1438 (Fed. Cir. 1988). The teachings of the references can be combined only if there is

some suggestion or incentive in the prior art to do so. In re Fine, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988). Hindsight is strictly forbidden. It is impermissible to use the claims as a framework to pick and choose among individual references to recreate the claimed invention Id. at 1600; W.L. Gore Associates, Inc., v. Garlock, Inc., 220 U.S.P.Q. 303, 312 (Fed. Cir. 1983).

Moreover, the mere fact that a prior art structure could be modified to produce the claimed invention would not have made the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992); In re Gordon, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

The Applicant further submits that even if there was a motivation or suggestion to combine (which the Applicant maintains that there is not), the teachings of Armitage and Sharma fail to bridge the substantial gap between the Applicant's invention, at least with regard to independent claim 1, and the teachings and invention of Hamel for at least the reasons described above.

More specifically, in contrast to the invention of the Applicant, the invention and teachings of Sharma are directed to an optical wavelength division multiplexed network system which permits communication between any of a plurality of nodes via a main trunk line constructed by interconnecting the nodes by use of an optical fiber in a ring form. (See Sharma, Abstract). The Applicant submits that there is absolutely no teaching or suggestion in Sharma for a tributary subsystem, a multiplexing subsystem or for nodes communicating with a head-end node via respective separate communication channels as taught and claimed by at least the Applicant's claim 1. Because neither the teachings of Hamel nor Sharma alone teach, suggest or disclose the Applicant's invention at least with respect to claim 1, and specifically with regard to a tributary subsystem, a multiplexing subsystem or for nodes communicating with a head-end node via respective separate communication channels, the Applicant submits that any allowable combination of Hamel and Sharma also fail to teach, suggest or disclose the invention of the Applicant at least with regard to claim 1.

The teachings of Armitage disclose an integral cross-connect module but fail to teach the invention of the Applicant at least with regard to claim 1 and specifically with regard to a tributary subsystem, a multiplexing subsystem or for nodes communicating with a head-end node via respective separate communication channels. Because neither the teachings of Hamel, nor Sharma, nor Armitage alone teach, suggest or disclose the Applicant's invention at least with respect to claim 1, the Applicant submits that any allowable combination of Hamel, Sharma and Armitage also fail to teach, suggest or disclose the invention of the Applicant at least with regard to claim 1.

As such and for at least the reasons described above, the Applicant respectfully submits that the surveillance system of Hamel does not render obvious the virtual star network of the present invention. Furthermore, the Applicant respectfully submits that the teachings of Armitage and Sharma fail to bridge the substantial gap between Hamel and the invention of the Applicant. As such, the Applicant respectfully submits that the teachings of Hamel, Armitage and Sharma, alone, or in any suggested or allowable combination (if any did exist, which the Applicant submits that none does) do not render at least the Applicant's independent claim 1 obvious.

Therefore, the Applicant submits that claim 1 as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

Likewise, independent claim 22 recites similar relevant features as recited in claim 1. As such, and for at least the reasons stated herein, the Applicant submits that independent claim 22, as it now stands, also fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

Furthermore, dependent claims 2, 4-7 and 11 depend either directly or indirectly from independent claim 1 and recite additional features therefor. As such and for at least the reasons set forth herein, the Applicant submits that none of these claims is obvious with respect to the teachings of Hamel, Armitage and Sharma. Therefore the Applicant submits that dependent claims 2, 4-7 and 11 also fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.



The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

B. 35 U.S.C. § 103

The Examiner rejected claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Hamel in view of Armitage and Sharma as applied to claim 1 above, and further in view of Jahromi (U.S. Patent No. 5,416,768). The rejection is respectfully traversed.

Claim 3 depends directly from independent claim 1 and recites further limitations thereof. The Examiner applied Hamel, Armitage and Sharma to claim 3 as described above for the Examiner's rejection of claim 1. The Examiner alleges that the differences between Hamel, Armitage and Sharma and claim 3 is that Hamel, Armitage and Sharma fail to teach that the head-end node includes a tributary subsystem configured to be coupled to a plurality of devices to enable the devices to communicate over the ring network. As such the Examiner cites Jahromi for alleging the teaching of such a tributary subsystem. The Applicant respectfully disagrees.

As described above, the teachings of Hamel, Armitage and Sharma, alone, or in any allowable combination do not teach, suggest or describe the Applicant's invention at least with regard to independent claim 1. In addition, the teachings of Jahromi alone, for a digital cross-connection apparatus for use in interconnecting first and second communications networks (See Jahromi, Abstract), do not anticipate or render obvious the Applicant's invention at least with regard to independent claim 1 directed to a virtual star network having a tributary subsystem, a multiplexing subsystem or for nodes communicating with a head-end node via respective separate communication channels.

Furthermore, the Applicant submits that there is absolutely no motivation or suggestion in either Hamel, Armitage, Sharma or Jahromi for the combination of the references to attempt to teach the invention of the Applicant.

The Applicant further submits that even if there was a motivation or suggestion to combine (which the Applicant maintains that there is not), the teachings of Jahromi fail to bridge the substantial gap between the Applicant's invention, at least with regard to independent claim 1 and the teachings and invention of Hamel, Armitage and Sharma. More specifically, the Jahromi fails to teach at least a multiplexing subsystem, or for nodes communicating with a head-end node via respective separate communication channels.

As such the Applicant submits that the teachings of Hamel, Armitage, Sharma and Jahromi, alone or in any suggested or allowable combination (if any did exist) do not render at least the Applicant's independent claim 1 obvious.

Therefore, at least because the teachings of Hamel, Armitage, Sharma and Jahromi, alone or in any allowable combination, do not teach, suggest, or describe the invention of the Applicant regarding at least claim 1 as discussed above, the teachings of Hamel, Armitage, Sharma and Jahromi also do not teach, suggest, or describe the invention of the Applicant regarding dependent claim 3, which depends from independent claim 1, and do not render the Applicant's claim 3 obvious.

Therefore, the Applicant submits that claim 3 as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

#### C. 35 U.S.C. § 103

The Examiner rejected claims 8, 17-19 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Hamel in view of Armitage and Sharma as applied to claim 1 and claim 5 above, and further in view of Dumortier ("Toward a new IP over ATM routing paradigm"). The rejection is respectfully traversed.

#### **CLAIM 8**

Claim 8 depends indirectly from independent claim 1 and recites further limitations thereof. The Examiner applied Hamel, Armitage and Sharma to claim 8 as described above for the Examiner's rejection of claim 1. The

Examiner alleges that the differences between Hamel, Armitage and Sharma and claim 8 is that Hamel, Armitage and Sharma fail to teach that the communication protocol is IP encapsulated within ATM. As such the Examiner cites Dumortier for alleging the teaching of such a communication protocol. The Applicant respectfully disagrees.

As described above, the teachings of Hamel, Armitage and Sharma, alone, or in any allowable combination do not teach, suggest or describe the Applicant's invention at least with regard to independent claim 1. In addition, the teachings of Dumortier alone, for an IP over ATM routing paradigm (See Dumortier, Abstract), do not anticipate or render obvious the Applicant's invention at least with regard to independent claim 1 directed to a virtual star network having a tributary subsystem, a multiplexing subsystem or for nodes communicating with a head-end node via respective separate communication channels.

Furthermore, the Applicant submits that there is absolutely no motivation or suggestion in either Hamel, Armitage, Sharma or Dumortier for the combination of the references to attempt to teach the invention of the Applicant.

The Applicant further submits that even if there was a motivation or suggestion to combine (which the Applicant maintains that there is not), the teachings of Dumortier fail to bridge the substantial gap between the Applicant's invention, at least with regard to independent claim 1 and the teachings and invention of Hamel, Armitage and Sharma. More specifically, Dumortier fails to teach at least a tributary subsystem, a multiplexing subsystem, or for nodes communicating with a head-end node via respective separate communication channels.

As such the Applicant submits that the teachings of Hamel, Armitage, Sharma and Dumortier, alone or in any suggested or allowable combination (if any did exist) do not render at least the Applicant's independent claim 1 obvious.

Therefore, at least because the teachings of Hamel, Armitage, Sharma and Dumortier, alone or in any allowable combination, do not teach, suggest,

or describe the invention of the Applicant regarding at least claim 1 as discussed above, the Applicant submits that the teachings of Hamel, Armitage, Sharma and Dumortier also do not teach, suggest, or describe the invention of the Applicant regarding dependent claim 8, which depends indirectly from independent claim 1, and do not render the Applicant's claim 8 obvious.

Therefore, the Applicant submits that claim 8 as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

**CLAIMS 17-19 and 21**

Regarding claims 17-19 and 21 the Examiner alleges that claims 17-19 and 21 correspond largely to coherent combinations of the limitations in system claims 1 and 5-8. As such, the Examiner alleges that because the teachings of Hamel in view of Armitage and Sharma and further in view of Dumortier make obvious the claims 1 and 5-8, the teachings of Hamel in view of Armitage and Sharma and further in view of Dumortier also make obvious the claims of 17-19 and 21. The Applicant respectfully disagrees.

As described above, the teachings of Hamel, Armitage and Sharma, alone, or in any allowable combination do not teach, suggest or describe the Applicant's invention at least with regard to independent claim 1 and dependent claims 5-7. In addition, the teachings of Dumortier alone, for an IP over ATM routing paradigm (See Dumortier, Abstract), do not anticipate or render obvious the Applicant's invention at least with regard to independent claim 1 directed to a virtual star network having a tributary subsystem, a multiplexing subsystem or for nodes communicating with a head-end node via respective separate communication channels and further with regard to dependent claims 5-8.

Furthermore, the Applicant submits that there is absolutely no motivation or suggestion in either Hamel, Armitage, Sharma or Dumortier for the combination of the references to attempt to teach the invention of the Applicant.

The Applicant further submits that even if there was a motivation or suggestion to combine (which the Applicant maintains that there is not), the teachings of Dumortier fail to bridge the substantial gap between the Applicant's invention, at least with regard to independent claim 1 and dependent claims 5-8 and the teachings and invention of Hamel, Armitage and Sharma at least as described above.

As such the Applicant submits that the teachings of Hamel, Armitage, Sharma and Dumortier, alone or in any suggested or allowable combination (if any did exist) do not render at least the Applicant's independent claim 1 and dependent claims 5-8 obvious.

Therefore, at least because the teachings of Hamel, Armitage, Sharma and Dumortier, alone or in any allowable combination, do not teach, suggest, or describe the invention of the Applicant regarding at least claim 1 and claims 5-8 as discussed above, the Applicant submits that the teachings of Hamel, Armitage, Sharma and Dumortier also do not teach, suggest, or describe the invention of the Applicant regarding claims 17-19 and 21 which correspond largely to combinations of the limitations in system claims 1 and 5-8 as alleged by the Examiner.

Therefore, the Applicant submits that claims 17-19 and 21 as they now stand, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

#### D. 35 U.S.C. § 103

The Examiner rejected claims 9-10 and 17-20 under 35 U.S.C. § 103(a) as being unpatentable over Hamel in view of Armitage and Sharma as applied to claim 1 above, and further in view of Lea (U.S. Patent No. 6,115,373). The rejection is respectfully traversed.

#### **CLAIMS 9-10**

Claims 9-10 depend indirectly from independent claim 1 and recite further limitations thereof. The Examiner applied Hamel, Armitage and Sharma to claims 9-10 as described above for the Examiner's rejection of

claim 1. The Examiner alleges that the differences between Hamel, Armitage and Sharma and claims 9-10 is that Hamel, Armitage and Sharma fail to teach the second set of protocol-related limitations of claims 9-10. As such the Examiner cites Lea for alleging the teaching of such protocol-related limitations. The Applicant respectfully disagrees.

As described above, the teachings of Hamel, Armitage and Sharma, alone, or in any allowable combination do not teach, suggest or describe the Applicant's invention at least with regard to independent claim 1. In addition, the teachings of Lea alone, for an information network architecture that can handle both ATM and IP traffic employing unbuffered switches employing a system of priority (See Lea, Abstract), do not anticipate or render obvious the Applicant's invention at least with regard to independent claim 1 directed to a virtual star network having a tributary subsystem, a multiplexing subsystem or for nodes communicating with a head-end node via respective separate communication channels.

Furthermore, the Applicant submits that there is absolutely no motivation or suggestion in either Hamel, Armitage, Sharma or Lea for the combination of the references to attempt to teach the invention of the Applicant.

The Applicant further submits that even if there was a motivation or suggestion to combine (which the Applicant maintains that there is not), the teachings of Lea fail to bridge the substantial gap between the Applicant's invention, at least with regard to independent claim 1 and the teachings and invention of Hamel, Armitage and Sharma. More specifically, Lea fails to teach or suggest at least a tributary subsystem, a multiplexing subsystem, or for nodes communicating with a head-end node via respective separate communication channels.

As such the Applicant submits that the teachings of Hamel, Armitage, Sharma and Lea, alone or in any suggested or allowable combination (if any did exist) do not render at least the Applicant's independent claim 1 obvious.

Therefore, at least because the teachings of Hamel, Armitage, Sharma and Lea, alone or in any allowable combination, do not teach, suggest, or

describe the invention of the Applicant regarding at least claim 1 as discussed above, the Applicant submits that the teachings of Hamel, Armitage, Sharma and Lea also do not teach, suggest, or describe the invention of the Applicant regarding dependent claims 9-10, which depend either directly or indirectly from independent claim 1, and do not render the Applicant's claims 9-10 obvious.

Therefore, the Applicant submits that claims 9-10 as they now stand, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

#### **CLAIMS 17-20**

Regarding claims 17-20 the Examiner alleges that claims 17-20 correspond largely to coherent combinations of the limitations in system claims 1 and 9-10. As such, the Examiner alleges that because the teachings of Hamel in view of Armitage and Sharma and further in view of Lea make obvious the claims 1 and 9-10, the teachings of Hamel in view of Armitage and Sharma and further in view of Lea also make obvious the claims of 17-20. The Applicant respectfully disagrees.

As described above, the teachings of Hamel, Armitage and Sharma, alone, or in any allowable combination do not teach, suggest or describe the Applicant's invention at least with regard to independent claim 1 and dependent claims 9-10. In addition, the teachings of Lea alone, for an information network architecture that can handle both ATM and IP traffic employing unbuffered switches employing a system of priority (See Lea, Abstract), do not anticipate or render obvious the Applicant's invention at least with regard to independent claim 1 directed to a virtual star network having a tributary subsystem, a multiplexing subsystem or for nodes communicating with a head-end node via respective separate communication channels and further with regard to dependent claims 9-10.

Furthermore, the Applicant submits that there is absolutely no motivation or suggestion in either Hamel, Armitage, Sharma or Lea for the

combination of the references to attempt to teach the invention of the Applicant.

The Applicant further submits that even if there was a motivation or suggestion to combine (which the Applicant maintains that there is not), the teachings of Lea fail to bridge the substantial gap between the Applicant's invention, at least with regard to independent claim 1 and dependent claims 9-10 and the teachings and invention of Hamel, Armitage and Sharma at least as described above.

As such the Applicant submits that the teachings of Hamel, Armitage, Sharma and Lea, alone or in any suggested or allowable combination (if any did exist) do not render at least the Applicant's independent claim 1 and dependent claims 9-10 obvious.

Therefore, at least because the teachings of Hamel, Armitage, Sharma and Lea, alone or in any allowable combination, do not teach, suggest, or describe the invention of the Applicant regarding at least claim 1 and claims 9-10 as discussed above, the Applicant submits that the teachings of Hamel, Armitage, Sharma and Lea also do not teach, suggest, or describe the invention of the Applicant regarding claims 17-20 which correspond largely to combinations of the limitations in system claims 1 and 9-10 as alleged by the Examiner.

Therefore, the Applicant submits that claims 17-20 as they now stand, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

#### E. 35 U.S.C. § 103

The Examiner rejected claims 12-13 under 35 U.S.C. § 103(a) as being unpatentable over Hamel in view of Armitage and Sharma as applied to claim 1 above, and further in view of Elrefaie ("Multiwavelength Survivable Ring Network Architecture" ). The rejection is respectfully traversed.

Claims 12-13 depend either directly or indirectly from independent claim 1 and recite further limitations thereof. The Examiner applied Hamel, Armitage and Sharma to claims 12-13 as described above for the Examiner's



rejection of claim 1. The Examiner alleges that the differences between Hamel, Armitage and Sharma and claims 12-13 is that Hamel, Armitage and Sharma fail to teach that the multiplexer comprising a pair of multiplexers coupled to the first and second rings, respectively. As such the Examiner cites Elrefaie for alleging the teaching of such a pair of multiplexers. The Applicant respectfully disagrees.

As described above, the teachings of Hamel, Armitage and Sharma, alone, or in any allowable combination do not teach, suggest or describe the Applicant's invention at least with regard to independent claim 1. In addition, the teachings of Elrefaie alone, for a new architecture for implementing unidirectional and bi-directional self-healing interoffice ring networks using WDM technology for growth (See Elrefaie, Abstract), do not anticipate or render obvious the Applicant's invention at least with regard to independent claim 1 directed to a virtual star network having a tributary subsystem, a multiplexing subsystem or for nodes communicating with a head-end node via respective separate communication channels.

Furthermore, the Applicant submits that there is absolutely no motivation or suggestion in either Hamel, Armitage, Sharma or Elrefaie for the combination of the references to attempt to teach the invention of the Applicant.

The Applicant further submits that even if there was a motivation or suggestion to combine (which the Applicant maintains that there is not), the teachings of Elrefaie fail to bridge the substantial gap between the Applicant's invention, at least with regard to independent claim 1 and the teachings and invention of Hamel, Armitage and Sharma. More specifically, Elrefaie fails to teach or suggest at least a tributary subsystem, a multiplexing subsystem, or for nodes communicating with a head-end node via respective separate communication channels.

As such the Applicant submits that the teachings of Hamel, Armitage, Sharma and Elrefaie, alone or in any suggested or allowable combination (if any did exist) do not render at least the Applicant's independent claim 1 obvious.

Therefore, at least because the teachings of Hamel, Armitage, Sharma and Elrefaie, alone or in any allowable combination, do not teach, suggest, or describe the invention of the Applicant regarding at least claim 1 as discussed above, the Applicant submits that the teachings of Hamel, Armitage, Sharma and Elrefaie also do not teach, suggest, or describe the invention of the Applicant regarding dependent claims 12-13, which depend from independent claim 1, and do not render the Applicant's claims 12-13 obvious.

Therefore, the Applicant submits that claims 12-13 as they now stand, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

**F. 35 U.S.C. § 103**

The Examiner rejected claims 14-16 under 35 U.S.C. § 103(a) as being unpatentable over Hamel in view of Armitage and Sharma as applied to claim 1 above, and further in view of Elrefaie as applied to claim 12 above, and still further in view of Wu et al.. The rejection is respectfully traversed.

**CLAIM 14**

Claim 14 depends indirectly from independent claim 1 and directly from dependent claim 12 and recites further limitations thereof. The Examiner applied Hamel, Armitage, Sharma and Elrefaie to claim 14 as described above for the Examiner's rejection of claim 12. The Examiner alleges that the differences between Hamel, Armitage, Sharma and Elrefaie and claim 14 is that Hamel, Armitage, and Elrefaie fail to teach that the head-end node further includes a selector that compares a pair of signals received by the pair of demultiplexers and selects a signal from the pair of signals based on a quality parameter of each signal. As such the Examiner cites Wu for alleging the teaching of such a selector. The Applicant respectfully disagrees.

As described above, the teachings of Hamel, Armitage, Sharma and Elrefaie, alone, or in any allowable combination do not teach, suggest or describe the Applicant's invention at least with regard to independent claim 1 or dependent claim 12. In addition, the teachings of Wu alone, for using a

SONET SHR architecture in future survivable interoffice fiber networks (See Wu, Abstract), do not anticipate or render obvious the Applicant's invention at least with regard to independent claim 1 directed to a virtual star network having a tributary subsystem, a multiplexing subsystem or for nodes communicating with a head-end node via respective separate communication channels or with regard to dependent claim 12.

Furthermore, the Applicant submits that there is absolutely no motivation or suggestion in either Hamel, Armitage, Sharma, Elrefaie or Wu for the combination of the references to attempt to teach the invention of the Applicant.

The Applicant further submits that even if there was a motivation or suggestion to combine (which the Applicant maintains that there is not), the teachings of Wu fail to bridge the substantial gap between the Applicant's invention, at least with regard to independent claim 1 and dependent claim 12 and the teachings and invention of Hamel, Armitage, Sharma and Elrefaie. More specifically, Wu fails to teach or suggest at least a tributary subsystem, a multiplexing subsystem, or for nodes communicating with a head-end node via respective separate communication channels.

As such the Applicant submits that the teachings of Hamel, Armitage, Sharma, Elrefaie and Wu, alone or in any suggested or allowable combination (if any did exist) do not render at least the Applicant's independent claim 1 or dependent claim 12 obvious.

Therefore, at least because the teachings of Hamel, Armitage, Sharma, Elrefaie and Wu, alone or in any allowable combination, do not teach, suggest, or describe the invention of the Applicant regarding at least claim 1 and claim 12 as discussed above, the Applicant submits that the teachings of Hamel, Armitage, Sharma, Elrefaie and Wu also do not teach, suggest, or describe the invention of the Applicant regarding dependent claim 14, which depends directly from claim 12 and indirectly from independent claim 1, and do not render the Applicant's claim 14 obvious.

Therefore, the Applicant submits that claim 14 as it now stands, fully satisfies the requirements of 35 U.S.C. § 103 and is patentable thereunder.

**CLAIMS 15-16**

Regarding claims 15-16 the Examiner alleges that claims 15-16 correspond largely to coherent combinations of the limitations in system claims 1 and 12-14. As such, the Examiner alleges that because the teachings of Hamel in view of Armitage and Sharma and in view of Elrefaie and further in view of Wu make obvious the claims 1 and 12-14, the teachings of Hamel in view of Armitage and Sharma and in view of Elrefaie and further in view of Wu also make obvious the claims of 15-16. The Applicant respectfully disagrees.

As described above, the teachings of Hamel, Armitage, Sharma, and Elrefaie alone, or in any allowable combination do not teach, suggest or describe the Applicant's invention at least with regard to independent claim 1 and dependent claims 12-14. In addition, the teachings of Wu alone, for using a SONET SHR architecture in future survivable interoffice fiber networks (See Wu, Abstract), do not anticipate or render obvious the Applicant's invention at least with regard to independent claim 1 directed to a virtual star network having a tributary subsystem, a multiplexing subsystem or for nodes communicating with a head-end node via respective separate communication channels and further with regard to dependent claims 12-14.

Furthermore, the Applicant submits that there is absolutely no motivation or suggestion in either Hamel, Armitage, Sharma, Elrefaie or Wu for the combination of the references to attempt to teach the invention of the Applicant.

The Applicant further submits that even if there was a motivation or suggestion to combine (which the Applicant maintains that there is not), the teachings of Wu fail to bridge the substantial gap between the Applicant's invention, at least with regard to independent claim 1 and dependent claims 12-14 and the teachings and invention of Hamel, Armitage, Sharma and Elrefaie at least as described above.

As such the Applicant submits that the teachings of Hamel, Armitage, Sharma, Elrefaie and Wu, alone or in any suggested or allowable combination

(if any did exist) do not render at least the Applicant's independent claim 1 and dependent claims 12-14 obvious.

Therefore, at least because the teachings of Hamel, Armitage, Sharma, Elrefaid and Wu, alone or in any allowable combination, do not teach, suggest, or describe the invention of the Applicant regarding at least claim 1 and claims 12-14 as discussed above, the Applicant submits that the teachings of Hamel, Armitage, Sharma, Elrefaie and Wu also do not teach, suggest, or describe the invention of the Applicant regarding claims 15-16 which correspond largely to combinations of the limitations in system claims 1 and 12-14 as alleged by the Examiner.

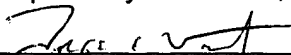
Therefore, the Applicant submits that claims 15-16 as they now stand, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

#### Conclusion

If the Examiner believes that there are any unresolved issues requiring adverse action in any of the claims now pending in the application, it is requested that the Examiner telephone Jorge Tony Villabon, Esq. at (732) 530-9404 x 1131 or Eamon J. Wall, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,



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Jorge Tony Villabon, Attorney  
Reg. No. 52,322

Dated: 09 July 03

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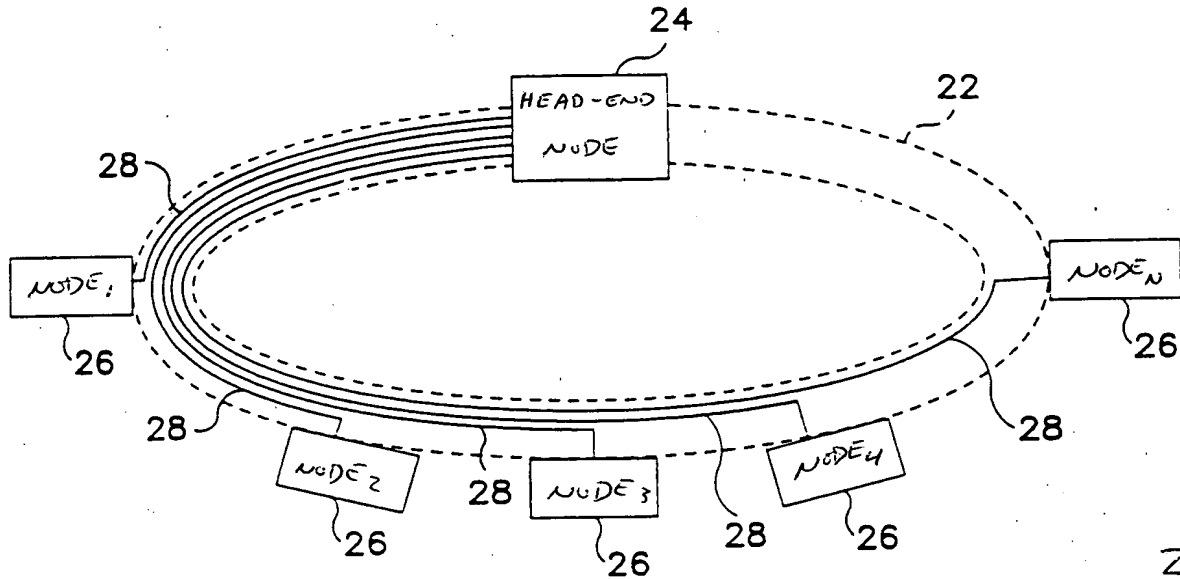


FIG. 1

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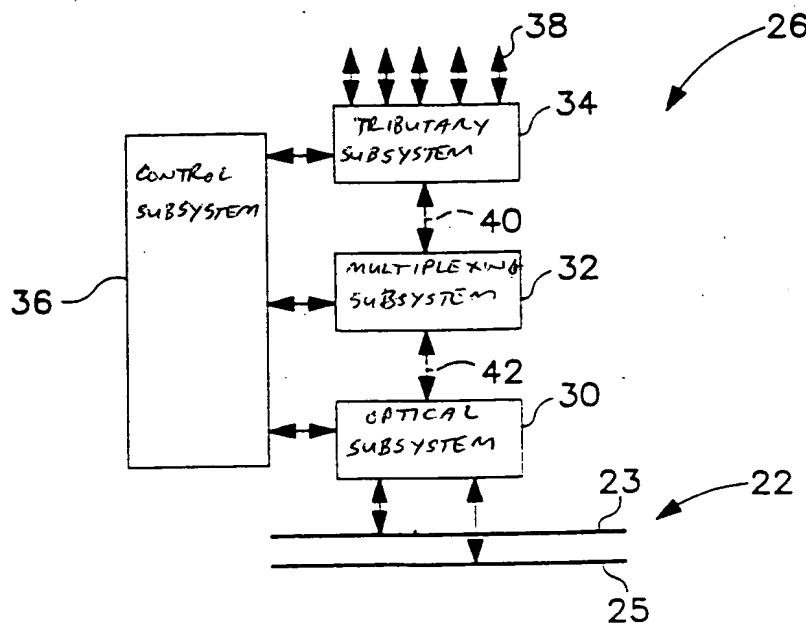
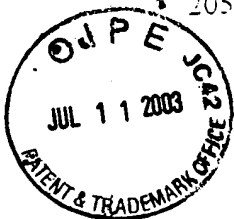


FIG. 2



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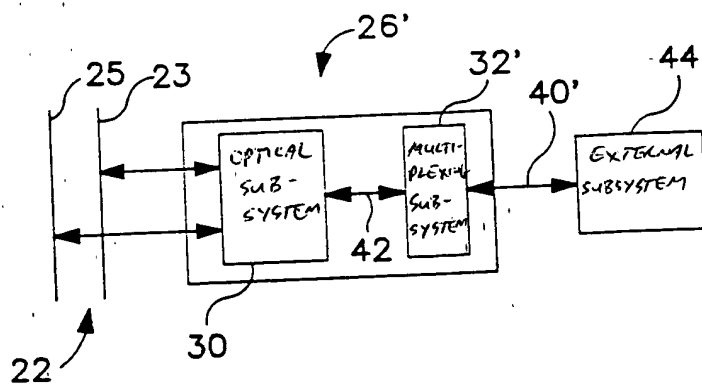


FIG. 3

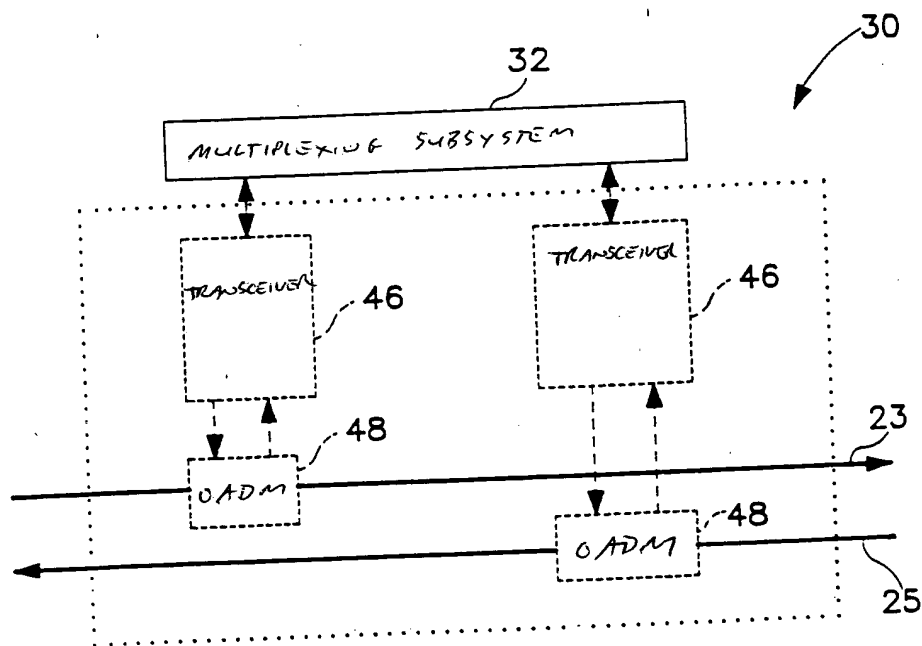


FIG. 4

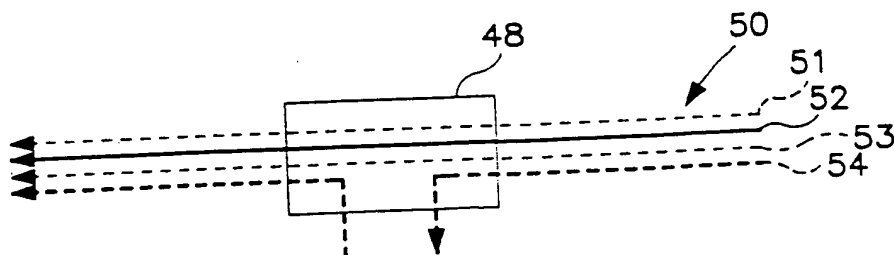


FIG. 5



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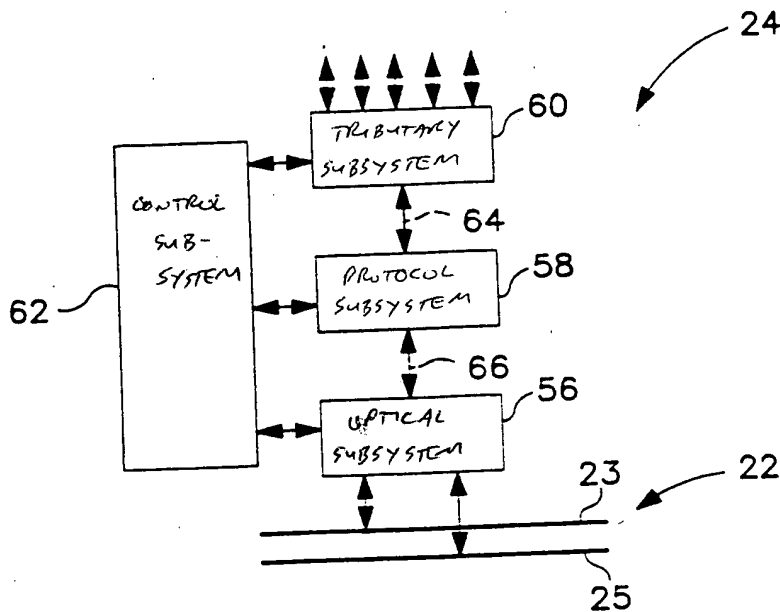


FIG. 6

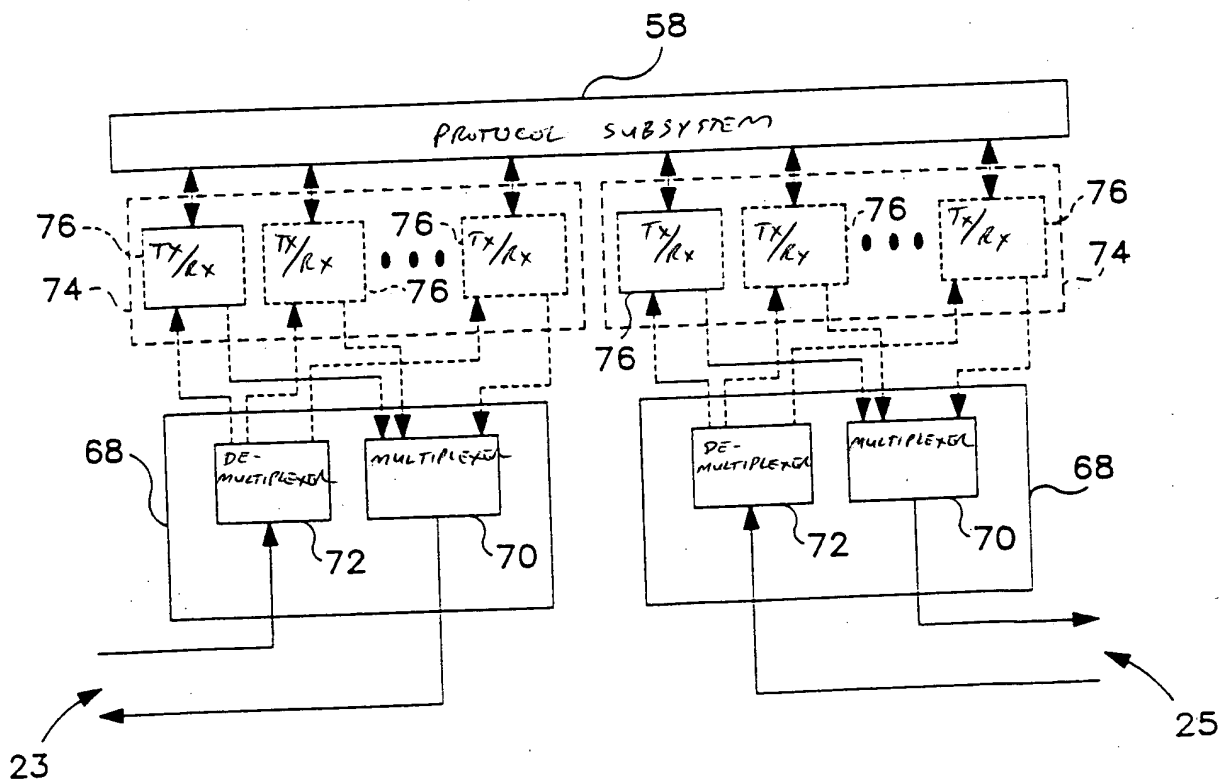


FIG. 7





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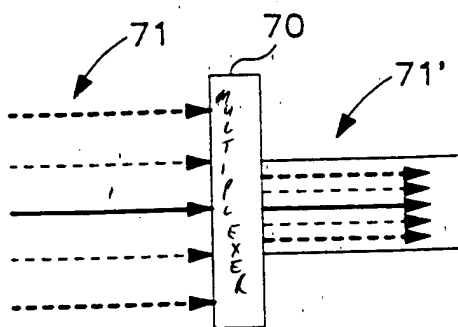


FIG. 8A

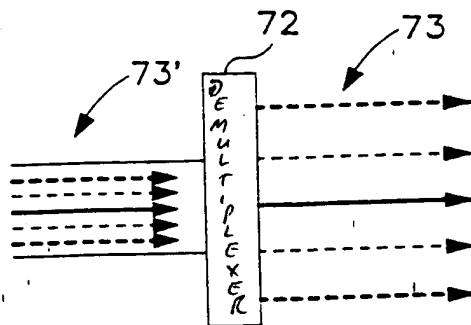


FIG. 8B

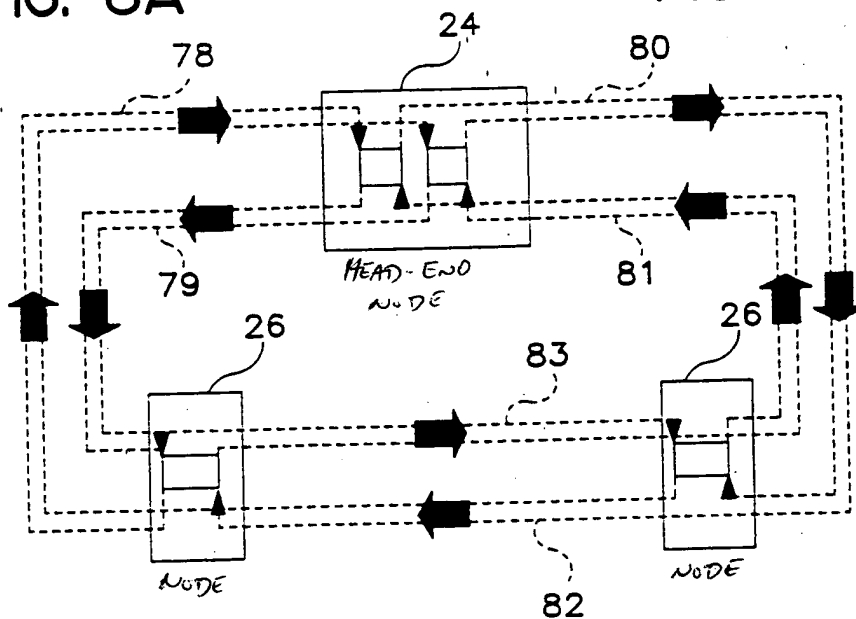


FIG. 9

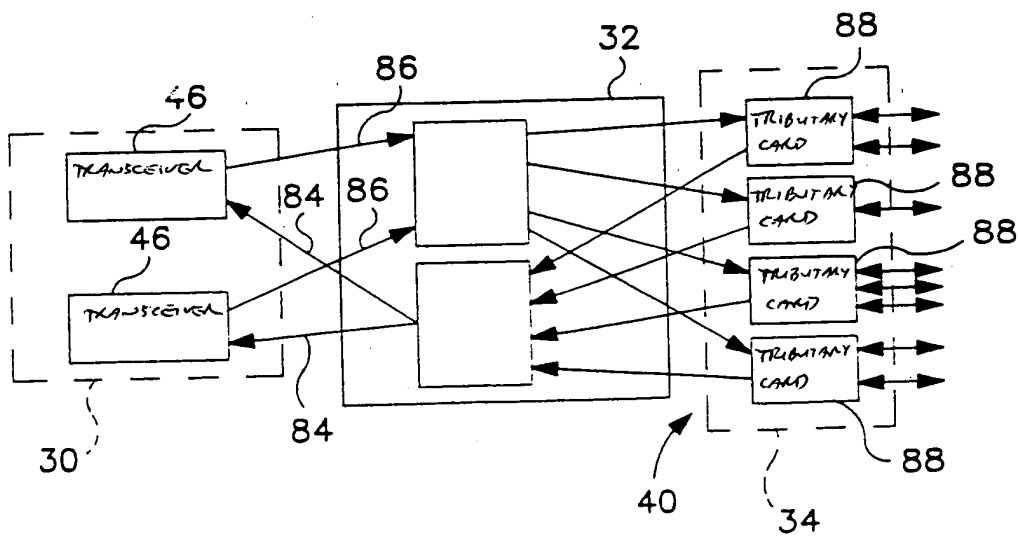


FIG. 10



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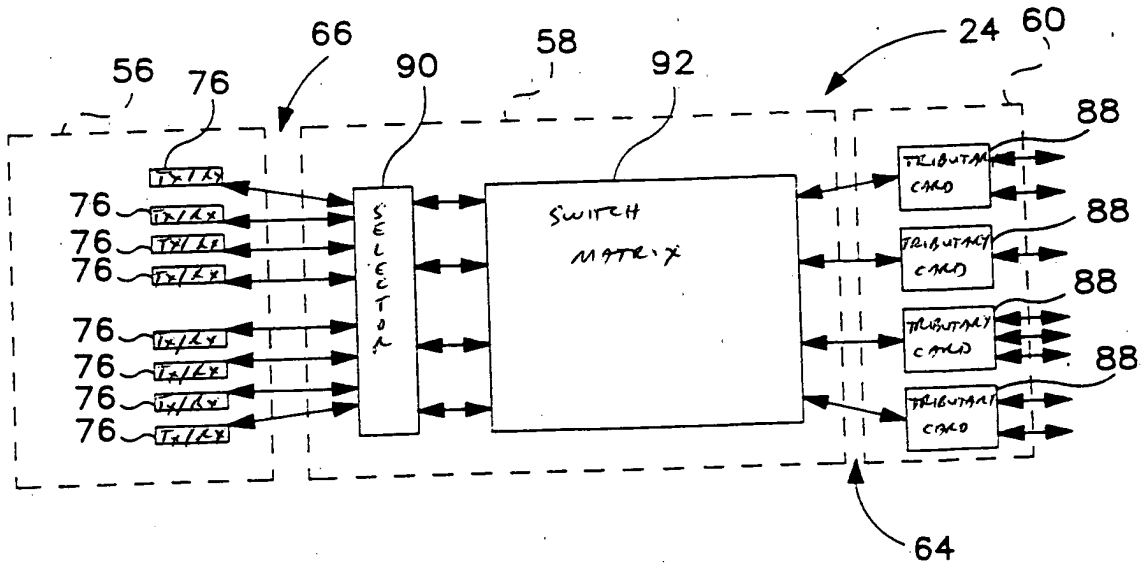


FIG. 11

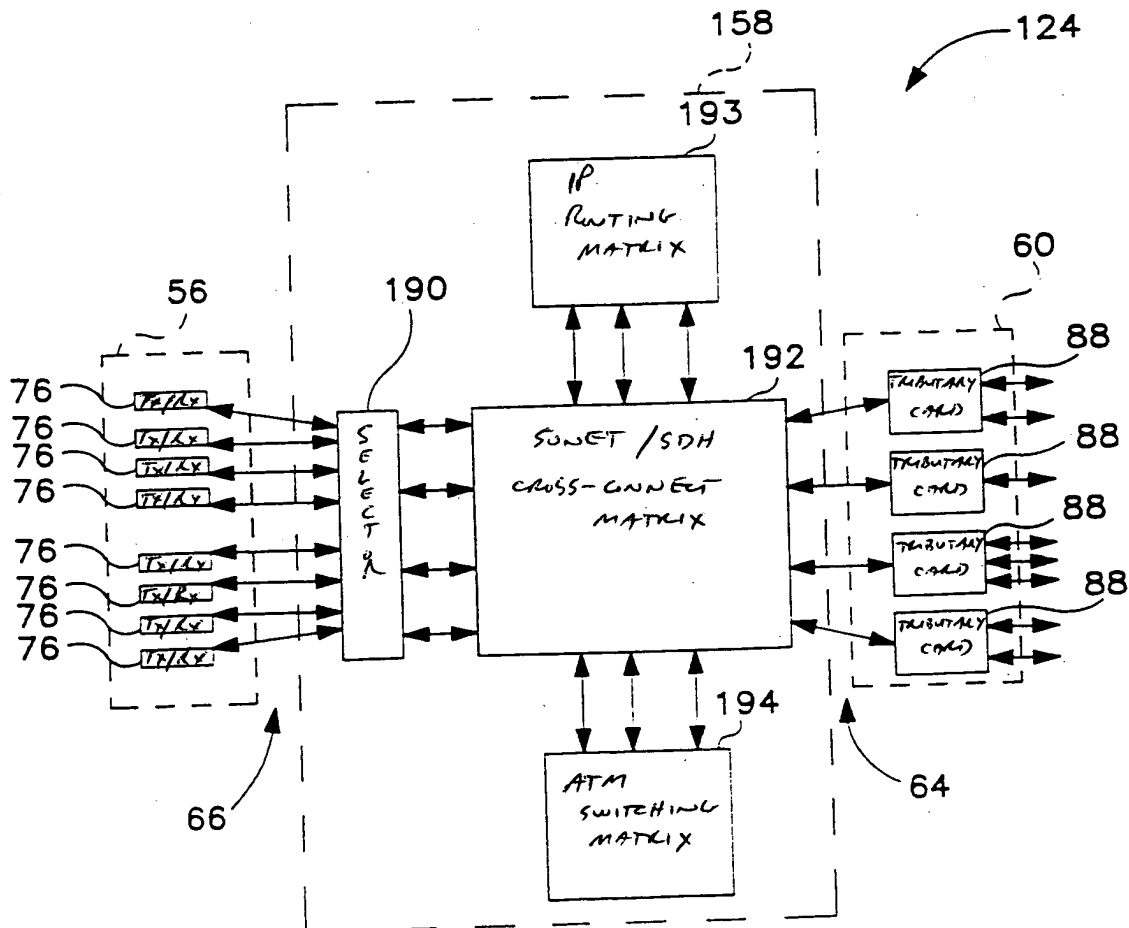


FIG. 12



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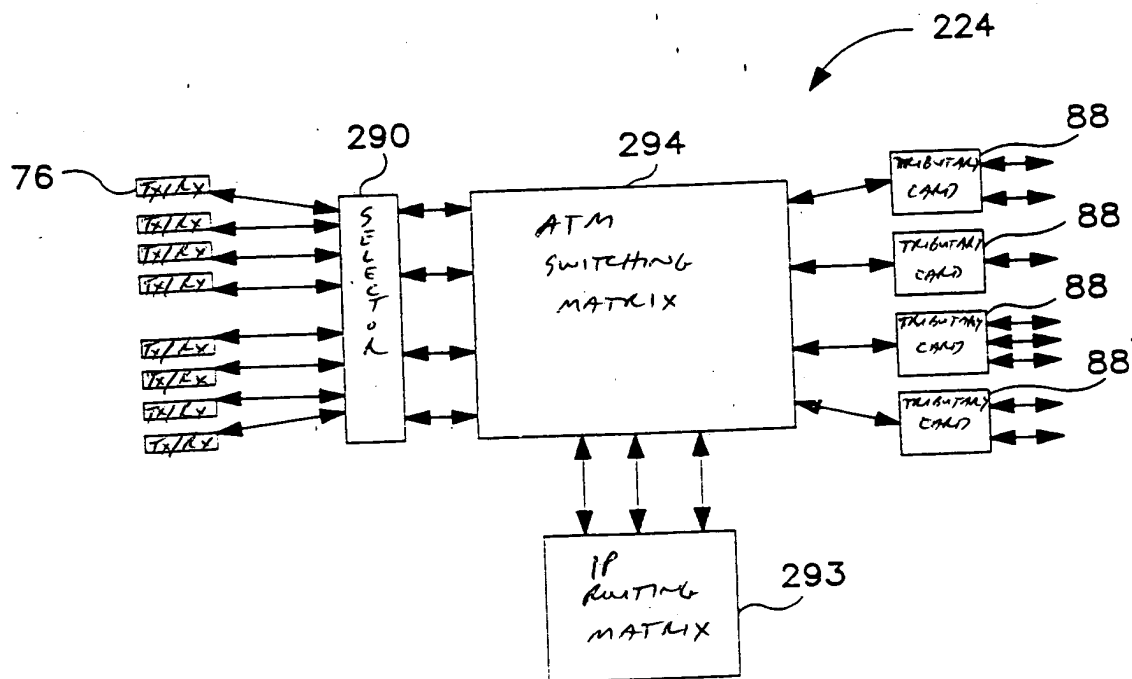


FIG. 13